



JAC/FB

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Attorney Docket No.: 1657.55US01

Huang et al.

Confirmation No.: 4597

Application No.: 10/073,666

Examiner: John Sotomayor

Filed: February 11, 2002

Group Art Unit: 3714

For: NAVAL VIRTUAL TARGET RANGE SYSTEM

PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT
ABANDONED UNINTENTIONALLY UNDER 37 C.F.R. § 1.137(b)

Mail Stop - DAC
Attention: Office of Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The above-identified application became abandoned for failure to respond to the outstanding Office Action dated January 26, 2004, within the prescribed time.

Applicant hereby petitions for revival of this application. Enclosed herewith are the following items:

1. Petition fee in the amount of \$1,330.00;
2. RCE in the form of a reply responsive within the meaning of 37 CFR 1.111 to the last Office action; and
3. Copies of the relevant documents.

Since this utility application was filed on or after June 8, 1995, no terminal disclaimer is required.

Applicants hereby request revival of the present application for unintentional abandonment.

Applicants, through their attorneys, timely filed an Amendment After Final in response to a Final Office Action dated January 26, 2004 by transmitting the Office Action, on March 29, 2004, by facsimile to the United States Patent and Trademark Office (“USPTO”) in accordance with 37 C.F.R §§ 1.6(d) and 1.8(a). However, Applicants’ attorney did not receive an auto-reply receipt from the USPTO indicating that the documents had been received. Applicants’ attorney then resubmitted the papers together with a copy of the Facsimile Report Transmission page indicating that 15 pages were transmitted to the USPTO on March 29, 2004. Applicants’ attorney followed this with a telephonic conversation with Examiner John Sotomayor regarding the facsimile transmission of the Amendment and non-receipt of an auto-reply, and with a repeat transmittal of the documents by facsimile on April 13, 2004.

After waiting for a response from the USPTO and receiving none, Applicants’ attorney once again telephoned Examiner Sotomayor on July 02, 2004, to inquire whether he had received the transmitted documents. On the Examiner’s advise, Applicants’ attorney retransmitted the documents for a third time by facsimile on the very same day, to both the USPTO at its main number, and the Examiner’s personal fax number. This time Applicants received an auto reply sheet in response.

Applicants’ attorney telephoned the Examiner who confirmed that he now had the response and would consider the aforementioned action responded to in a timely manner. Applicants’ attorney placed additional phone calls to the Examiner prior to the six month deadline of July 26, 2004, and received assurance that the reply would be considered as timely filed. On August 3, 2004, Examiner Sotomayor called Applicants’ attorney and left a telephonic

message in regard to the Response to the Office Action. In this message, a verbatim transcription of which is attached herewith, Examiner Sotomayor reconfirmed that "this case will be treated as timely received." Since the USPTO had finally acknowledged the receipt of the Amendment After Final, Applicants' attorney reasonably believed that there would be a reasonable time period to respond to any substantive issues the Examiner subsequently raised in response to the Amendment.

However, on August 13, 2004, Applicants received an Advisory Action, which stated that the period for reply to the Office Action was set to expire three months from the mailing date of the final rejection, i.e., April 26, 2004. This was followed by another Office communication from the USPTO on September 02, 2004 informing Applicants that "a proposed reply was received on July 02, 2004," and that the application had become abandoned because Applicants had failed to timely file a proper reply to the Office Action of January 26, 2004. It was only upon receiving the Notice of Abandonment mailed by the PTO on September 02, 2004, that Applicants' attorney discovered that according to the USPTO policy, the Application had become abandoned, even in the face of the delays that were not caused by Applicants in submitting the Amendment After Final and the repeated assurances of the Examiner that the response would be treated as timely filed. Copies of all the aforementioned communications with the USPTO are attached herewith.

Although Applicants had timely responded to the Office Action by transmitting the response on March 29, 2004, the USPTO failed to receive the Amendment After Final or respond to the action until August 13, 2004. Applicants' attorney, in reasonable reliance on Examiner's statements, believed there would be accorded a sufficient period of time, if necessary, for reply to the Office Action after the mailing of an Advisory Action. Because the

Application No. 10/073,666

Advisory Action was not mailed until August 13, 2004, and because Applicants' efforts in prosecuting the application have been continuous and diligent, Applicants respectfully submit that at no time was there ever an intention to abandon the above-identified application and the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition pursuant to 37 CFR 1.137(b) was unintentional.

Respectfully submitted,



Brad Pedersen
Registration No. 32,432

Customer No. 24113
Patterson, Thuente, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5774

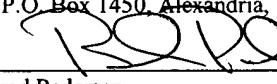
Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 16-0631.

CERTIFICATE OF MAILING

I hereby certify that this document is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

September 17, 2004

Date of Deposit



Brad Pedersen

interoffice

MEMORANDUM

[REDACTED]

To: File 1657.55-US-01 (10/073,666)

From: Examiner John Sotomayor, USPTO

Subject: Response to Office Action

Date: August 3, 2004

The following is a transcription of a telephone message from Examiner John Sotomayor:

"Good afternoon. This is Examiner John Sotomayor from the USPTO. I'm calling about application no. 10/073,666. This case will be treated as timely received so I don't think you have anything to worry about there. The problem I'm having is getting it to move through the system on this end, so I can't give you an estimate as to when an action will be prepared. Anyway, if you have any further questions on this action, please give me a call back. My number here is 703-305-4558. Thank you very much."

MEMO TO FILE:

File No.: 1657.55-US-01

From: Jann Patton

Date: July 2, 2004

Re: Response to Office Action Filed April 5, 2004

I spoke with Examiner John Sotomayor again today to be sure he received the response to the Office Action dated January 26, 2004. We initially faxed our response on April 5, 2004 but never rec'd an auto reply from the PTO. I then spoke with Examiner Sotomayor and re-faxed our response on April 13, 2004.

Apparently, the Examiner still did not receive the response. Today he advised me to re-fax the response to both the main number & his personal fax no, which I did.

I have now received an auto reply sheet on the response and spoke with Examiner Sotomayor. He confirmed he now had the response and would consider this action responded to in a timely manner.

/jlp

Auto-Reply Facsimile Transmission



TO:

Fax Sender at 6123499266

Fax Information

Date Received:

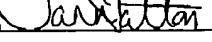
7/2/2004 1:50:21 PM [Eastern Daylight Time]

Total Pages:

21 (including cover page)

ADVISORY: This is an automatically generated return receipt confirmation of the facsimile transmission received by the Office. Please check to make sure that the number of pages listed as received in Total Pages above matches what was intended to be sent. Applicants are advised to retain this receipt in the unlikely event that proof of this facsimile transmission is necessary. Applicants are also advised to use the certificate of facsimile transmission procedures set forth in 37 CFR 1.8(a) and (b), 37 CFR 1.6(f). Trademark Applicants, also see the Trademark Manual of Examining Procedure (TMEP) section 306 et seq.

Received
Cover
Page
=====>

07/02/2004 12:51 FAX 6123499266	PATTERSON THUENTE SKAAR	001
PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A. 4800 IDS Center, 80 South Eighth Street Minneapolis, Minnesota 55402-2100 USA		
FACSIMILE COVER SHEET		
TELEPHONE: (612) 349-5740	TOLL FREE: 1-800 331-4537	
FACSIMILE: (612) 349-9266		
TOTAL NUMBER OF PAGES BEING SENT (INCLUDING COVER SHEET): 21		
<input type="checkbox"/> Original documents to follow by mail		<input checked="" type="checkbox"/> No originals will be sent
DATE: July 2, 2004		
TO: Examiner John Sotomayor Group Art Unit 3714		FAX #: 1-703-872-9306 and 1-703-746-8361
PHONE #: 1-703-305-4558		
Application No.: 10/073,666 Applicant: Huang et al. Due Date: April 26, 2004		OUR REF.: 1657.55US01
FROM: Brad Pedersen PHONE #: (612) 349-5774		
Attached please find the following for filing in the above-identified application.		
(1) Amendment in response to Office Action dated January 26, 2004.		
Respectfully submitted,  Brad Pedersen Registration No. 32,432		
CERTIFICATE OF FACSIMILE TRANSMISSION:		
I hereby certify that this paper is being transmitted by Facsimile to the U.S. Patent and Trademark Office, Fax No. 703-872-9306 on the date shown below.		
Date <u>July 2, 2004</u> Date <u>July 2, 2004</u>		 Brad Pedersen
<small>THIS FACSIMILE TRANSMISSION CONTAINS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED FOR THE PARTY IDENTIFIED ABOVE. IF YOU HAVE RECEIVED THIS TRANSMISSION IN ERROR, PLEASE CALL PATTERSON, THUENTE, SKAAR & CHRISTENSEN COLLECT AT (612) 349-5740. DISTRIBUTION, REPRODUCTION OR ANY OTHER USE OF THIS TRANSMISSION BY ANY PARTY OTHER THAN THE INTENDED RECIPIENT IS STRICTLY PROHIBITED.</small>		
FACSIMILE SENT BY: <u>Jana Paton</u> 		

*** TX REPORT ***

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TX/RX NO	2182
CONNECTION TEL	
CONNECTION ID	
ST. TIME	07/02 12:51
USAGE T	05 '15
PGS. SENT	21
RESULT	OK

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Minneapolis, Minnesota 55402-2100 USA

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DATE: July 2, 2004

TO: Examiner John Sotomayor FAX #: 1-703-872-9306 and
Group Art Unit 3714 1-703-746-8361

PHONE #: 1-703-305-4558

Application No.: 10/073,666 OUR REF.: 1657.55US01
Applicant: Huang et al.
Due Date: April 26, 2004

FROM: Brad Pedersen
PHONE #: (612) 349-5774

Attached please find the following for filing in the above-identified application.

(1) Amendment in response to Office Action dated January 26, 2004.

Respectfully submitted,



Brad Pedersen

Date July 2, 2004

*** TX REPORT ***

TRANSMISSION OK

TX/RX NO 2181
CONNECTION TEL
CONNECTION ID
ST. TIME 07/02 12:50
USAGE T 05 '12
PGS. SENT 21
RESULT OK

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DATE: July 2, 2004

TO: Examiner John Sotomayor FAX #: 1-703-872-9306 and
Group Art Unit 3714 1-703-746-8361

PHONE #: 1-703-305-4558

Application No.: 10/073,666 OUR REF.: 1657.55US01
Applicant: Huang et al.
Due Date: April 26, 2004

FROM: Brad Pedersen
PHONE #: (612) 349-5774

Attached please find the following for filing in the above-identified application.

(1) Amendment in response to Office Action dated January 26, 2004.

Respectfully submitted,



Brad Pedersen
Registration No. 22,122

Date July 2, 2004

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS Center, 80 South Eighth Street
Minneapolis, Minnesota 55402-2100 USA

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TO: Examiner John Sotomayor FAX #: 1-703-872-9306 and
Group Art Unit 3714 1-703-746-8361

PHONE #: 1-703-305-4558

Application No.: 10/073,666 OUR REF.: 1657.55US01
Applicant: Huang et al.
Due Date: April 26, 2004

FROM: Brad Pedersen
PHONE #: (612) 349-5774

Attached please find the following for filing in the above-identified application.

(1) Amendment in response to Office Action dated January 26, 2004.

Respectfully submitted,



Brad Pedersen
Registration No. 32,432

Date July 2, 2004

CERTIFICATE OF FACSIMILE TRANSMISSION

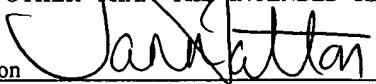
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July 2, 2004
Date


Brad Pedersen

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TX/RX NO	4474
CONNECTION TEL	
CONNECTION ID	
ST. TIME	04/13 12:54
USAGE T	04 '28
PGS. SENT	18
RESULT	OK

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
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80 South 8th Street
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DATE: April 13, 2004

TO: Examiner John Sotomayor FAX #: 1-703-746-8361
United States Patent and Trademark Office

TEL #: 1-703-305-4558

YOUR REF.: 10/073,666

OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.

PHONE #: (612) 349-5774

COMMENTS:

Dear Examiner Sotomayor:

Per our telephone conversation, attached is the Amendment After Final we faxed in on March 29, 2004, and then again on April 5, 2004 with our fax confirmation sheets. We still have not been able to locate the Auto Fax Reply sheets from the PTO. We apologize for any confusion and look forward to a response to the Office Action. Thank you.

*Att
J. Pedersen* Sincerely,

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.

4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100 USA

FACSIMILE COVER SHEET

TELEPHONE: (612) 349-5740 TOLL FREE: 1-800-331-4537

FACSIMILE: (612) 349-9266

TOTAL NUMBER OF PAGES BEING SENT (INCLUDING COVER SHEET): 18

[] Original documents to follow by mail

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DATE: April 13, 2004

TO: Examiner John Sotomayor FAX #: 1-703-746-8361
United States Patent and Trademark Office

TEL #: 1-703-305-4558

YOUR REF.: 10/073,666

OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.

PHONE #: (612) 349-5774

COMMENTS:

Dear Examiner

Per our telephone conversa-

After our telephone conversation, attached is the Amendment After Final we mailed in on March 27, 2004, and then again on April 5, 2004 with our fax confirmation sheets. We still have not been able to locate the Auto Fax Reply sheets from the PTO. We apologize for any confusion and look forward to a response to the Office Action. Thank you.

Sincerely,

Jann Patton
Jann Patton
Secretary to Brad Pedersen

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*** TX REPORT ***

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TX/RX NO	4174
CONNECTION TEL	
CONNECTION ID	
ST. TIME	04/05 14:18
USAGE T	04'10
PGS. SENT	17
RESULT	OK

4-12-04 11:15 am.

Spoke to "Charles" at
PTO re fax coversheet.

John Sotomayor - fax:
703-746-8361

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS Center, 80 South Eighth Street
Minneapolis, Minnesota 55402-2100 USA

FACSIMILE COVER SHEET

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TOTAL NUMBER OF PAGES BEING SENT (INCLUDING COVER SHEET): 17 Original documents to follow by mail No originals will be sent

DATE: April 5, 2004

TO: Examiner John Sotomayor

FAX #: 1-703-872-9306

PHONE #: 1-703-305-4558

YOUR REF.: 10/073,666

OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.
PHONE #: (612) 349-5774

Attached for filing please find the following documents:

- 1) Facsimile Report Transmission page – 1 page;
- 2) Facsimile Cover Page – 1 page;
- 3) Amendment After Final - 14 pages.

The above-identified documents were previously filed via facsimile on March 29, 2004. We are resubmitting the papers because we did not receive an auto-reply receipt from the U.S. Patent and Trademark Office indicating that the documents had been received. We have included a copy of our Facsimile Report Transmission page indicating that 15 pages were transmitted on March 29, 2004. Please call with any questions.

Sincerely,



Brad Pedersen

PATTERSON THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS Center, 80 South Eighth Street
Minneapolis, Minnesota 55402-2100 USA

FACSIMILE COVER SHEET

TELEPHONE: (612) 349-5740 TOLL FREE: 1-800 331-4537
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PHONE #: 1-703-305-4558

YOUR REF.: 10/073,666

OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.
PHONE #: (612) 349-5774

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- 3) Amendment After Final - 14 pages.

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Sincerely,



Brad Pedersen
Registration No. 32,432

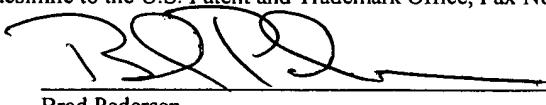
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April 5, 2004

Date


Brad Pedersen

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TX/RX NO	3978
CONNECTION TEL	
CONNECTION ID	
ST. TIME	03/29 14:23
USAGE T	03 '40
PGS. SENT	15
RESULT	OK

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
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80 South 8th Street
Minneapolis, Minnesota 55402-2100 USA

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TOTAL NUMBER OF PAGES BEING SENT (INCLUDING COVER SHEET): 15

Original documents to follow by mail

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DATE: March 29, 2004

TO: Examiner John Sotomayor FAX #: 1-703-872-9306
United States Patent and Trademark Office

TEL #: 1-703-305-4558

YOUR REF.: 10/073,666

OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.

PHONE #: (612) 349-5774

COMMENTS:

Please see attached Amendment After Final in response to Final Office Action dated January 26, 2004.

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.

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80 South 8th Street
Minneapolis, Minnesota 55402-2100 USA

FACSIMILE COVER SHEET

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FACSIMILE: (612) 349-9266

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DATE: March 29, 2004

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United States Patent and Trademark Office

TEL #: 1-703-305-4558

YOUR REF.: 10/073,666 OUR REF.: 1657.55US01

FROM: Brad Pedersen, Esq.

PHONE #: (612) 349-5774

COMMENTS:

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FACSIMILE SENT BY

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Attorney Docket No.: 1657.55US01

Huang et al.

Confirmation No.: 4597

Application No.: 10/073,666

Examiner: John Sotomayor

Filed: February 11, 2002

Group Art Unit: 3714

For: NAVAL VIRTUAL TARGET RANGE SYSTEM

AMENDMENT AFTER FINAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INTRODUCTORY COMMENTS

In response to the Final Office Action of January 26, 2004, amendment to the above-identified patent application is requested.

The present amendment comprises the following sections:

A. Amendments to the Claims

B. Remarks

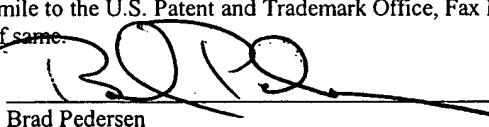
Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 16-0631.

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office, Fax No. 1-703-872-9306 on the date shown below thereby constituting filing of same.

March 29, 2004

Date


Brad Pedersen

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Currently Amended) A naval virtual target range system, comprising:

a control subsystem operatively connected to a naval weapon system and having a computer system including:

means for implementing a three-dimensional graphical view of a naval virtual target range for use in conjunction with a naval weapon system fire exercise; and

means for calculating results of the naval weapon system fire exercise from selective data provided by the naval weapon system; and

a spotter subsystem operatively connected to the control subsystem and having a transmitter-receiver that communicates with at least one spotter sensor system, a global positioning satellite system and a spotter subsystem display for viewing three-dimensional graphic results of the naval weapon system fire exercise generated by the computer system.

2. (Original) The naval virtual target range system of claim 1, wherein the computer system further includes a terrain database storing a plurality of geographic formation implementations and a target database storing a plurality of physical object implementations, and wherein the naval virtual target range is implemented from implementations stored in the terrain database and the target database.
3. (Currently Amended) The naval virtual target range system of claim 1, ~~further comprising wherein the sensor subsystem includes~~ a buoy subsystem including at least three sensors, that determines impact points of the naval weapon system fire exercise relative to the buoy subsystem, and wherein the buoy subsystem is operatively connected to the control subsystem to also provide data to the control subsystem for calculating results of the naval weapon system fire exercise.
4. (Original) The naval virtual target range system of claim 3, wherein the buoy subsystem has a global positioning system and each of the at least three sensors is selected from a group of sensors consisting of radar and acoustic sensors, and wherein the buoy subsystem records the time when a sensor perceives an impact sound and the location of the sensor.
5. (Currently Amended) The naval virtual target range system of claim 1, ~~further comprising wherein the sensor subsystem includes~~ an aerial subsystem including an aerial vehicle having a combination of a camera system and radar, that determines impact points of the naval weapon system fire exercise relative to the aerial vehicle, and wherein the aerial vehicle is

operatively connected to the control subsystem to also provide data to the control subsystem for calculating results of the naval weapon system fire exercise.

6. (Original) The naval virtual target range system of claim 5, wherein the camera system is selected from a group of camera systems consisting of a charged-coupled device camera, a digital television camera, an infrared camera, and a combination of these, wherein the radar is a millimeter-wave radar, and wherein each view point on the plane of a camera view is associated with a line segment between the view point and the center point of the camera view and with a directional number associated with the line segment.

7. (Previously Presented) The naval virtual target range system of claim 5, wherein the control subsystem detects significant changes in visual data, wherein said significant change in said visual data comprises an object, said object having an outline, said outline having a major axis that is used to find an impact point of ordnance launched during the fire exercise.

8. (Original) The naval virtual target range system of claim 1, wherein data collected from the naval fire exercise by the control subsystem is used by the control subsystem to find and map impact points of ordnance launched during the fire exercise, calculate trajectories of the ordnance from the data and the impact points, and calculate virtual impact points on the naval virtual target range from the data, the trajectories, and the naval virtual target range implementation.

9. (Cancelled)

10. (Currently Amended) A naval virtual target range system control subsystem operatively connected to a naval weapon system and having a computer system comprising:

a terrain database storing a plurality of geographic formation implementations;

a target database storing a plurality of physical object implementations;

means for implementing a three-dimensional graphical view of a naval virtual target range from implementations stored in the terrain database and the target database, for use in conjunction with a naval weapon system fire exercise;

means for calculating results of the naval weapon system fire exercise from selective data provided by the naval weapon system; and

a spotter subsystem operatively connected to the control subsystem and having a transmitter-receiver that communicates with at least one spotter sensor system, a global positioning satellite system and a spotter subsystem display for viewing three-dimensional results of the naval weapon system fire exercise generated by the computer system.

11. (Currently Amended) The naval virtual target range system of claim [[7]]10, further comprising wherein the sensor subsystem includes a buoy subsystem including at least three sensors, that determines impact points of the naval weapon system fire exercise relative to the buoy subsystem, and wherein the buoy subsystem is operatively connected to the control subsystem to also provide data to the control subsystem for calculating results of the naval weapon system fire exercise.

12. (Previously Presented) The naval virtual target range system of claim 11, wherein the buoy subsystem has a global positioning system and each of the at least three sensors is selected from a group of sensors consisting of radar and acoustic sensors, and wherein the buoy subsystem records the time when a sensor perceives an impact sound and the location of the sensor.

13. (Currently Amended) The naval virtual target range system of claim [[7]]10, further comprising wherein the sensor subsystem includes an aerial subsystem including an aerial vehicle having a combination of a camera system and radar, that determines impact points of the naval weapon system fire exercise relative to the aerial vehicle, and wherein the aerial vehicle is operatively connected to the control subsystem to also provide data to the control subsystem for calculating results of the naval weapon system fire exercise.

14. (Original) The naval virtual target range system of 11, wherein the camera system is selected from camera systems consisting of a charged-coupled device camera, a digital television camera, an infrared camera, and a combination of these, wherein the radar is a millimeter-wave radar, and wherein each view point on the plane of a camera view is associated with a line segment between the view point and the center point of the camera view and with a directional number associated with the line segment.

15. (Currently Amended) A naval virtual target range system, comprising:

a control subsystem operatively connected to a naval weapon system and having a computer system including:

means for implementing a three-dimensional graphical view of a naval virtual target range for use in conjunction with a naval weapon system fire exercise; and

means for calculating results of the naval weapon system fire exercise from selective data provided by the naval weapon system and at least three sensors;

a buoy subsystem including the at least three sensors, that determines impact points of the naval weapon system fire exercise relative to the buoy subsystem, and wherein the buoy subsystem is operatively connected to the control subsystem to provide data to the control subsystem; and

a spotter subsystem operatively connected to the control subsystem and having a transmitter-receiver that communicates with at least the buoy subsystem, a global positioning satellite system and a spotter subsystem display for viewing three-dimensional results of the naval weapon system fire exercise generated by the computer system.

16. (Currently Amended) The naval virtual target range system of claim [[13]]15, wherein the computer system further includes a terrain database storing a plurality of geographic formation implementations and a target database storing a plurality of physical object

implementations, and wherein the naval virtual target range is implemented from implementations stored in the terrain database and the target database.

17. (Currently Amended) The naval virtual target range system of claim [[14]]16, wherein the buoy subsystem has a global positioning system and each of the at least three sensors is selected from a group of sensors consisting of radar and acoustic sensors, and wherein the buoy subsystem records the time when a sensor perceives an impact sound and the location of the sensor.

18. (Original) A naval virtual target range system, comprising:

a control subsystem operatively connected to a naval weapon system and having a computer system including:

means for implementing a naval virtual target range for use in conjunction with a naval weapon system fire exercise; and

means for calculating results of the naval weapon system fire exercise from selective data provided by the naval weapon system and a combination of a camera system and radar; and

an aerial vehicle including the combination of a camera system and radar, that determines the impact points of the naval weapon system fire exercise relative to the aerial vehicle, and wherein the aerial vehicle is operatively connected to the control subsystem to also provide data to the control subsystem.

19. (Currently Amended) The naval virtual target range system of claim [[16]]18, wherein the computer system further includes a terrain database storing a plurality of geographic formation implementations and a target database storing a plurality of physical object implementations, and wherein the naval virtual target range is implemented as a three-dimensional graphical view from implementations stored in the terrain database and the target database.

20. (Currently Amended) The naval virtual target range system of claim [[16]]18, further comprising a spotter subsystem operatively connected to the control subsystem and having a spotter subsystem display for viewing three-dimensional results of the naval weapon system fire exercise generated by the computer system.

21. (Currently Amended) The naval virtual target range system of claim [[16]]18, wherein the camera system is selected from a group of camera systems consisting of a charged-coupled device camera, a digital television camera, an infrared camera, and a combination of these, wherein the radar is a millimeter-wave radar, and wherein each view point on the plane of a camera view is associated with a line segment between the view point and the center point of the camera view and with a directional number associated with the line segment.

22. (Currently Amended) A method of operating a naval virtual target range system, comprising:

providing a naval virtual target range system including:

a control subsystem operatively connected to a naval weapon system and having a computer system programmed for implementing a three-dimensional graphical view of a naval virtual target range and programmed for calculating results of a naval weapon fire exercise; and

a spotter subsystem operatively connected to the control subsystem and having a transmitter-receiver that communicates with at least one spotter sensor system, a global positioning satellite system and a spotter subsystem display;

using the control subsystem to implement a naval virtual target range;

displaying the naval virtual target range on the spotter subsystem display;

conducting a naval weapon system fire exercise;

providing data about the naval weapon system fire exercise from the naval weapon system to the control subsystem;

using the control subsystem to calculate results about the naval weapon system fire exercise; and

displaying the results on the spotter subsystem display.

23. (Currently Amended) The method of claim 22, further comprising the steps of providing a buoy subsystem as at least part of the spotter subsystem including means for collecting data about a live naval weapon system fire exercise and providing at least some collected data to the control subsystem for calculating results of the naval weapon fire exercise.

24. (Currently Amended) The method of claim 22, further comprising the steps of providing an aerial subsystem as at least part of the spotter subsystem including means for collecting data about a live naval weapon system fire exercise and providing at least some collected data to the control subsystem for calculating results of the naval weapon fire exercise.

25-26. (Cancelled)

REMARKS

Claims 1-24 are pending. By this Amendment, claims 1, 3, 5, 10, 11, 13, 15-17, 19-21 and 22-24 are amended. Claims 25-26 have been cancelled. The amendment of claims 16-17 and 19-21 corrects an antecedent reference. The amendment to independent claims 1, 10, 15 and 22 is supported by the specification, for example, at page 8, lines 5-9. No new matter is introduced by the amendment.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 8, 9, and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by Pollak et al. (U.S. Patent No. 6,106,297). Applicants respectfully request reconsideration of these rejections.

With regard to independent claims 1, 10, 15 and 22, the claims have been amended to clarify that the spotter subsystem includes a transmitter-receiver and a GPS and communicates with at least one sensor system. As such, the claims now recite the means for implementing the spotter subsystem that, based on the response in the Office Action to the previous arguments made by Applicants, are admittedly not shown by Pollack et al.

Claim Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 3, 4 and 15 as being unpatentable over Pollak et al. (U.S. Patent No. 6,106,297) in view of Blume. (U.S. H1618) under 35 U.S.C. § 103(a). Applicants respectfully traverse these rejections.

It is respectfully submitted that a *prima facie* case for the obviousness of the claimed invention has not been established. Because the entire teaching of Pollak et al. is to a virtual 'exercise' simulations, one of ordinary skill in the art will not be motivated to combine the *virtual* 'exercise' simulation occurring on a virtual terrain as disclosed by Pollak with the field of *physical* sonobuoys that transmit position of all of the buoys to a receiving vehicle as disclosed by Blume. There is no motivation or suggestion set forth in the Office Action that supports the combination of Pollack with Blume. Nor is there any identification of the teaching in either Pollack or Blume as to how the combination of these two references would be made so as to arrive at the invention as currently claimed.

The Examiner rejected claims 5, 7, 10, 13, 16, 18-20 and 24 as being unpatentable over Pollak et al. (U.S. Patent No. 6,106,297) in view of Tye (U.S. Patent No. 4,308,015) under 35 U.S.C. § 103(a). Applicants respectfully traverse these rejections.

It is respectfully submitted that a *prima facie* case for the obviousness of the claimed invention has not been established. As discussed above, the 'exercise' disclosed by Pollak is computer generated and therefore virtual in its entirety. Pollak describes the exercise as a "simulation-based training exercise." (Col. 2, line 23) with the "various simulation units are carrying out the exercise on the virtual terrain or battle field." (Col. 6, lines 53-55). Pollak does not teach or suggest interfacing the purely virtual system as disclosed in the Pollak patent with a physical, external live fire system. Tye teaches the principle of firing *simulated* bullets at real targets. (Tye, Col. 3, lines 18-20.) (Emphasis supplied). Neither Pollak nor Tye teach the *naval weapon system fire exercise* conducted with *live fire* that can interact with a *physical* target as taught by Applicant. There is no motivation or suggestion set forth in the Office Action that

supports the combination of Pollack with Tye. Nor is there any identification of the teaching in either Pollack or Tye as to how the combination of these two references would be made so as to arrive at the invention as currently claimed.

The Examiner rejected claims 11, 12, 17, and 23 as being unpatentable over Pollak et al. in view of Blume, and further in view of Tye under 35 U.S.C. § 103(a). Applicants respectfully traverse these rejections for all of the reasons previously set forth.

CONCLUSION

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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